

CLAIMS

1. A method for forming patterns aligned on either side
5 of a thin film deposited on a substrate, the method comprising
local etching of the thin film in order to form a first
marking characterized in that it comprises:

- depositing a first pattern layer on the thin film,
deposition of the first pattern layer preceding or following
10 local etching of the thin film,
- a first lithography step for defining a location of a
first pattern, with alignment of the first pattern location
relatively to the first marking,
- local etching of the first pattern layer in order to form
15 a first pattern,
- depositing a first bonding layer for covering the first
marking and the first pattern,
- turning over the obtained structure following the
deposition of the first bonding layer,
- 20 - suppressing the substrate,
- a step for etching the first bonding layer in order to
form a second marking at the location of the first marking,
- a step for depositing a second pattern layer,
- a second lithography step for defining a location of a
25 second pattern, with alignment of the second pattern location
relatively to the second marking, and
- a step for etching the second pattern layer in order to
form the second pattern.

30 2. The method for forming patterns according to claim
1, characterized in that the turning over of the structure is
followed by a bonding step for bonding the first bonding layer
with a second bonding layer which covers a transfer substrate.

35 3. The method according to claim 2, characterized in
that, as the first and second bonding layers are oxide layers,

bonding is a molecular bonding.

4. The method according to claim 2, characterized in that the second marking is transferred into the transfer
5 substrate.

5. The method according to claim 1, characterized in that the local etching of the first and second pattern layers is plasma etching.
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6. The method according to claim 1, characterized in that the first and the second pattern layers are layers of polycrystalline silicon, or metal, or nitride or silicon, or silica, or HiK material.
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7. The method according to claim 1, characterized in that the thin film is semiconductor thin film.

8. The method according to claim 7, characterized in that the semiconductor thin film is silicon, gallium arsenide, or SiGe film.
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9. The method according to claim 7, characterized in that the local etching of the semiconductor thin film is wet
25 chemical etching or anisotropic plasma etching.

10. The method according to claim 7, characterized in that it comprises a step for forming a first gate oxide layer between the semiconductor thin film and the first pattern
30 layer and in that the step for depositing the second pattern layer is preceded by the deposition of a second gate oxide layer on the semiconductor thin film.

11. The method according to claim 10, characterized in that the first pattern and the second pattern are transistor
35 gates.

12. The method according to claim 1, characterized in that the thin film is a metal thin film.

5 13. The method according claim 12, characterized in that the metal thin film is TiN or W film.

10 14. The method according to claim 1, characterized in that the first and second lithography steps are optical or electronic lithography steps.

15 15. The method according to claim 1, characterized in that it comprises the formation of a buried buffer layer between the thin film and the substrate.

16. The method according to claim 15, characterized in that the buried buffer layer is a SiO₂ or SiGe or Ni₃N₄ layer.